UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,994	12/05/2003	Dong-won Kim	Q78477	7251

23373 7590 02/13/2007

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
BAYARD, EMMANUEL	
ART UNIT	PAPER NUMBER
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/727,994	KIM, DONG-WON	
	Examiner	Art Unit	
	Emmanuel Bayard	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsunaga U.S. Patent No 5,267,041.

As per claims 1 and 9, Matsunaga teaches a channel equalization apparatus in a digital receiver, the apparatus comprising: a filter filtering a received signal and outputting a channel equalization output signal (see figs.3, 7 element 14 and col.4, lines 6-8); and an equalization amplitude control unit controlling an equalization coverage area of the received signal (see figs.3, 7 element 34) by controlling a filtering coefficient (see fig.3 element 40) of the filter based on a level of a ghost, if the ghost is included in the received signal (see figs.3, 7 element 36 and col.4, lines 65-67 and col.5, lines 1-67).

As per claim 2, Matsunaga teaches wherein the equalization amplitude control unit comprises: a detector detecting the level of the ghost and outputting a determination result (see fig.3 element 36 and col.4, lines 65-67); and a coefficient determiner determining the filtering coefficient (see fig.3 element 40) based on the level of the ghost detected by the detector and providing the filtering coefficient to the filter (see fig.3 element 14 and col.4, lines 6-8).

As per claim 3, Matsunaga inherently teaches wherein the detector determines whether the ghost is a near ghost and the coefficient determiner determines the filtering coefficient by referring to the determination result of the detector.

As per claim 4, Matsunaga inherently teaches wherein if the ghost is the near ghost and the equalization coverage area is required to change, the coefficient determiner provides the filtering coefficient to the filter, such that the filtering coefficient is applied to a time range and a phase range of the near ghost.

As per claim 5, Matsunaga teaches channel equalization method in a digital receiver, the method comprising; detecting a ghost from a received signal (see fig.3 element 36 and col.4, lines 65-67); detecting a level of the ghost as a detected level of the ghost (see col.6, lines 63-67 and col.7, lines 3-35); and controlling an equalization coverage area of the received signal based on the detected level of the ghost and performing channel equalization for the received signal (see fig.3 element 34 and col.4, lines 63-67 and col.5, lines 1-67).

As per claim 6, Matsunaga inherently teaches further comprising determining whether the detected ghost is a near ghost, wherein if the detected ghost is the near ghost, performing channel equalization further comprises applying the equalization coverage area based on the detected level of the ghost to an equalization coverage area of the near ghost.

As per claim 7, Matsunaga teaches wherein the digital receiver (see col.4, lines 1-10) is a digital broadcast receiver and the received signal is a received broadcasting signal.

As per claim 8, Matsunaga teaches wherein the digital receiver (see col.4, lines 1-10) wherein the digital receiver is a digital broadcast receiver and the received signal is a received broadcasting signal.

As per claim 10, Matsunaga inherently teaches wherein the means for controlling the equalization coverage area comprises: means for detecting the level of the ghost and outputting a determination result; and means for determining the filtering coefficient based on the level of the ghost detected by the means for detecting and providing the filtering coefficient to the means for filtering.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Iga U.S. Patent No 5,065,241 teaches a ghost cancellation.

Limbeerg et al U.S. Pub No 20010033341 A1 teaches ghost cancellation.

Jun U.S. patent No 6,480,237 B1 teaches a vestigial sideband mode detection.

Matsunaga U.S. Patent No 5,973,752 teaches a ghost removal apparatus.

Kim et al U.S. Patent No 5,530,485 teaches channel equalizer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272 3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM) Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571 272 2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Emmanuel Bayard
Primary Examiner
Art Unit 2611

EMMANUEL BAYARD
PRIMARY EXAMINER

2/3/07